## REMARKS

Independent claim 1 and claims 2-17 depended from claim 1 remain in this application for examination.

**In the Drawings:**

The Examiner has objected to the drawings because the drawings do not show every feature of the invention as specified in the claims. Applicants respectfully traverse this rejection.

With respect to claim 1, claim 10 recites that flange portion of the housing is adapted to fixed to the wall with a peripheral weld. The Examiner's attention is directed to Figs. 6 and 7 which show a weld 80 which secures the flange portion 76 of the wall 78.

With respect to claim 3, the term "second opening" in claim 3 has been changed to "first opening" so that claim 3 complies with the drawing and the disclosure.

**Claim Objections:**

Applicants have amended claim 1 to state that the alloy is alloy "having a resistance to corroding" and a "," has been inserted after "environment" in line 8.

**Claim Rejections – 35 U.S.C. §112:**

Claims 3-6 have been rejected under 35 U.S.C. §112, first paragraph because the term "second" opening in line 3 is incorrect and should have been "first opening". Claim 3 has been amended to correct this problem.

Each of the other informalities have been corrected in the following way.

The term "filter media" is now used throughout the claims rather than the term "filter element". The dependency of claim 5 has been changed to claim 3 so that the recitation of

the housing being "cylindrical" is not redundant. With respect to the rejection of claim 10, Applicants have amended claim 10 to recite that flange portion of the housing "is adapted to be fixed to the wall to the peripheral weld" which is not a positive recitation of the enclosure. Moreover, claims 12 and 13 are directed to the enclosure vent and the materials thereof rather than the enclosure itself and the materials thereof. Applicants have added a new claim 18 where the enclosure vent of claim 1 is adapted for use with a stainless steel enclosure." Clearly, Applicants are directing the claims to a particular vent structure which is adapted to, but not limited to, use with stainless steel enclosure.

Again with respect to claim 1 and claim 3, a mistake was made in claim 3 of an informal nature by reciting the term "second opening" instead of the correct term "first opening."

Claim 7 has been amended to clearly distinguish between the radially extending flange and annular shoulder by placing a "," after the term "flange portion" and reciting that the annular shoulder directly seals with a filter media. In claim 10, by replacing the term "wall" with the term "lid."

The correction to the base claims of course also pertain to the dependent claims. Consequently, it is respectfully submitted that all claim rejections under 35 U.S.C. §112, first and second paragraph have been addressed.

**Claim Rejections Under 35 U.S.C. §103:**

Claims 1-7 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Brassel et al. '328 in view of Felbaum et al. '669. Applicants respectfully traverse this rejection.

According to the Examiner, Felbaum teaches an enclosure vent formed of corrosion-resistant alloy which happens to be a proprietary alloy known in the art as HASTELLOY® C22® alloy which is identified in the literature as a nickel, chromium, molybdenum alloy (NiCr21Mo14w). See Exhibit A. Applicants respectfully submit that there is no suggestion in Felbaum et al. '669 that HASTELLOY® C22® provides a solution to Applicant's problem of having a seal with a resistance to corrosion which lasts for at least 200 years. Applicants are concerned with venting enclosures containing transuranic waste which venting must last at least 200 years to allow all explosive gases, such as hydrogen, to vent from the chamber before the vent becomes clogged. As is set forth in the specification, Applicants conducted tests using a type 316 stainless steel housing with a carbon-to-carbon filter element, as well as a test with the carbon-to-carbon composite filter media in the absence of stainless steel housing. These comparative tests established that stainless steel housings and lids cause plugging of the filter media. Applicants then used a housing and lid made of HASTELLOY®C22® alloy and achieved the unexpected result of the carbon-to-carbon filter media not becoming plugged before at least 200 years. Thus, for enclosures containing transuranic waste, Applicants discovered that HASTELLOY® C22® alloy achieved the unexpected result of substantially enhancing the life of vents for enclosure. Accordingly, it is respectfully submitted that claim 1 is not obvious over Brassel et al. '328 in view of Felbaum et al. '669.

With respect to the issue of the alloy being identified by its registered trademark, in Applicant's claims, the Examiner's attention is directed to page 4 of the attached online description of HASTELLOY® C22® alloy, Exhibit A. Moreover, the Examiner's attention is directed to the claims of Felbaum, specifically claim 13 which recites that "said closure

body is made of HASTELLOY® C22®." Accordingly, it is respectfully submitted that utilization of the trademark name to identify a specific alloy is permissible in this instance, especially since Applicants use the nickel, chromium, molybdenum designation in the claims, supported by the same designation at page 4, paragraph 3 of the specification.

While Felbaum et al. '699 discloses a closure body 36 which is vented, there is no carbon-to-carbon filter element associated with the closure body. Therefore, the combination of a carbon-to-carbon filter media retained by a housing made of HASTELLOY® C22® alloy is not suggested by Felbaum '669. Accordingly, there is no motivation in Felbaum to make a combination with Brassel et al. '328 which teaches away from a housing of a specific alloy. Note that in Brassel et al. '328 it is suggested that a preferred filter be "covered with a conventional perforated male cover 3 such as 22 gage mild steel." In Brassel et al. '328 there is absolutely no suggestion that the proximity of the stainless steel or any other type of metal housing to a "carbon-to-carbon" filter media would, over time, cause the filter media to clog. Clearly, it is Applicant's own disclosure which provides support to the Examiner's position that the combination of Brassel et al. '328 and Felbaum et al. '699 renders Applicant's claimed invention obvious. It is respectfully submitted that this rejection be withdrawn because it can only be based on an impermissible hind-sight reconstruction of Applicants claimed invention.

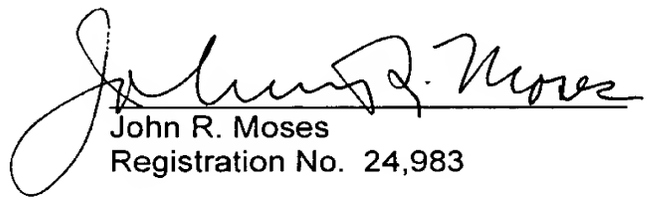
Applicant's claims 2-18 each depend from claim 1 and each rely on the combination of Brassel et al. '328 and Felbaum et al. '699. Since claims 2-15 further limit claim 1, they are patentable over the Brassel et al. '328 – Felbaum et al. '699 combination for the same reasons as claim 1. It is therefore unnecessary in this response to address each of the additional rejections based on tertiary references. None of the tertiary references,

(Carpanella '700, Seibert et al. '949, Ward '488, or Brassel et al. '699) address or suggest a solution to the problem of having a vent which does not clog for at least 200 years. Accordingly, none of these tertiary references, regardless of whatever else they teach, can render any of the dependent claims obvious.

With respect to claims 12 and 13, it is respectfully submitted that it is an inventive step to define corrosion rates which are acceptable for two centuries and then to discover an alloy, HATELLOY® C22® which in the presence of a carbon-to-carbon filter media, maintains that corrosion rate, so that transuranic materials may be safely stored in vented containers. The prior art simply does not recognize the problem, nor does the prior art address the problem in a manner to solve the problem.

In that this is a full and complete response to the Office Action of May 30, 2002, this application is now in condition for allowance. If the Examiner for any reason feels a personal conference with Applicants' attorneys might expedite prosecution of this application, the Examiner is respectfully requested to telephone the undersigned locally.

Respectfully submitted,



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## VERSION WITH MARKINGS TO SHOW CHANGES MADE

## IN THE SPECIFICATION:

Please amend the specification as follows:

**On page 2, the first full paragraph has been amended as follows:**

Tests have indicated that the prior art filters such as sintered metal filters become plugged when $HCl/CCl_4$ is bubbled therethrough so as to not permit passage of hydrogen gas. It was further found that 316 stainless steel housings with epoxy sealant and a carbon composite filter resulted in the epoxy becoming gooey due to reaction with solvents. It was further found that a mechanical press fit seal of a carbon-to-carbon composite filter in a 316 stainless steel housing passed compatibility tests with nitric acid, $CCl_4$ and TCE with no change in filtration performance, however, this arrangement is not compatible with HCl because exposure to HCl results in the filter media becoming plugged with a corrosion residue that is moist with condensed acid fumes. ~~Insulated~~ Isolated carbon-to-carbon filter media exhibited no plugging when tested in the absence of adjacent stainless steel structure.

**On page 4, the third full paragraph has been amended as follows:**

A gas, such as hydrogen gas, accumulates in the head space 17, the gas is vented through the filter media 16. In accordance with the principles of the present invention, the filter media 16 is enclosed within a housing 18 which is made of HASTELLOY7C-227 alloy

which is a NiCr21Mo14w (Nickel, Chromium, molybdenum) alloy, the significance of which is explained hereinafter.

**On page 4, the fourth full paragraph has been amended as follows:**

Referring now to Figs. 2-4, the filter media 16 is retained within housing 18 which is shown in greater detail and has a first end 20 and a second end 22. The housing 18 is cylindrical about an axis 24 and defines a chamber 26 having a shoulder 28 therein. The filter element 16 is disposed within the chamber 26 and abuts the shoulder 28. The shoulder 28 has a sharp annular edge 30 defined by a slightly conical portion 32 of the shoulder which bites into or penetrates the bottom surface 29 of the filter element 16 to provide a knife edge seal 36 so that the first end 20 of the housing is sealed with respect to the filter element 16. Consequently, all of the gasses, liquids and solid particles within the drum 10 which pass through the vent 14 must pass through the filter element 16.

**On page 7, the fifth full paragraph has been amended as follows:**

The filter element 16 comprises a carbon-to-carbon composite filter media which impedes diffusion of volatile organic compounds, eliminates the ~~needs to~~ need for GAC B Pads TMS7 for drums or costly repackaging operations; resist chloride corrosion, and is 70% porous.

**IN THE CLAIMS:**

Please amend the claims as follows:

1. (Amended) An enclosure vent adapted to vent hydrogen gas while controlling release of volatile organic compounds from an enclosure containing transuranic waste to an environment surrounding the enclosure while being resistant to corrosion from corrosive materials including chlorinated solvents, hydrochloric acid and nitric acid, the enclosure vent comprising:

a housing defining a chamber therein having a first opening adapted to communicate with said enclosure and a second opening adapted to communicate with the surrounding environment, the housing being made of a nickel, chromium, molybdenum ~~an~~ alloy having a resistance to ~~resisting~~ corrosion from said corrosive elements for at least 200 years, and

a unitary filter ~~element~~ media disposed in said chamber between the first and second openings for venting hydrogen gas from the container, the filter ~~element~~ media comprising a carbon-to-carbon filter for providing a hydrogen permeability greater than 10E-06 mol/S/mol fraction weight, a removal of 0.45 micron particles exceeding 99.00% at an air flow capacity less than 200 ml/min., at a pressure differential less than 1.0 inch, the unitary filter media being sealed with the housing by direct engagement with the alloy comprising the housing .

2. (Amended) The enclosure vent of claim 1 wherein the housing has a radially extending flange portion adapted to overlie the outer surface of the enclosure and an axially extending portion adapted to pass through the opening in the enclosure, the axially extending portion including a ~~coupler~~ coupling adapted to attach the housing to the enclosure.

3. (Amended) The enclosure vent of claim 2 wherein the axially extending portion of the housing includes ~~a support arrangement~~ an annular shoulder spaced form the first and second openings thereof within the chamber for preventing axial movement of the filter media through the ~~second~~ first opening of the housing and for sealing with the filter media and wherein the enclosure vent further includes a perforated lid having a plurality of openings, the perforated lid being attached to the housing for preventing axial movement of the filter media out of the second opening of the housing while allowing the passage of hydrogen gas therethrough.

5. (Amended) The enclosure vent of claim 4 3, wherein the axially extending portion of the housing is cylindrical and the coupler adapted to attach the housing to the container is a helical thread around the axially extending portion of the housing.

7. (Amended) The enclosure vent of claim 1, wherein the housing includes an axially extending threaded portion and a radially extending flange portion, with the chamber including an annular shoulder therein for supporting and directly sealing with the filter media, ~~and~~ the flange portion supporting a perforated lid made of the same

alloy ~~material~~ as the housing to cover the filter media while the filter media is supported on the annular shoulder.

10. (Amended) The enclosure vent of claim 8 wherein the enclosure ~~has~~ is a container having a stainless steel wall and wherein the flange portion of the housing is adapted to be fixed to the ~~wall~~ lid with a peripheral weld.

11. (Amended) The enclosure vent of claim 9 wherein the enclosure with which the enclosure vent is adapted to be used is a stainless steel container with a stainless steel lid and wherein the enclosure vent is adapted to be welded to the lid.

12. (Amended) The enclosure vent of claim 1 wherein the a nickel, chromium, molybdenum alloy of the housing has an average corrosion rate no greater than 2 mils per year when immersed in hydrochloric acid at a concentration of 2.0 to 2.5% by weight and a temperature of 90E; an average corrosion no greater than 2 mil per year when immersed in a solution of nitric acid and 15.8% hydrochloric acid at a concentration of 8.8% by weight and a temperature of 52EC.

13. (Amended) The enclosure vent of claim 12 wherein the average corrosion rate of the a nickel, chromium, molybdenum for hydrochloric acid is less than 1 mil per year; the average corrosion rate of the alloy for nitric acid is less than 1 mil per year, and the average corrosion rate of the alloy for nitric acid plus 15.8% hydrochloric acid is no greater than 4 mils per year.